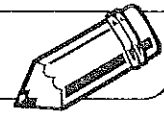


LESSON
3.2**True and Not True Special Cases**

For each of the following, write one special case for which the sentence is true.
Then write one special case for which the sentence is not true.

1. $m * n = m + n$

True _____

Not true _____

2. $\frac{a}{2} + b = a + b$

True _____

Not true _____

For each of the following, write at least 2 special cases for which the sentence is true. Circle each sentence that you think expresses a general pattern that is always true.

3. $a^2 = 2 * a$

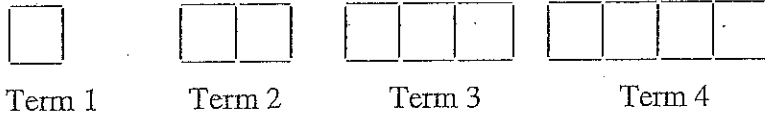
4. If a is not 0, then $\frac{a^m}{a^n} = a^{m-n}$

5. $(a + b) * (a - b) = a^2 - b^2$

Name: _____

3.2 Toothpick Sequences 1

Look at this sequence of toothpick figures.



Term	Toothpicks
1	4
2	7
3	10

- How many toothpicks are in Term 4?
- If you continued this pattern, how many toothpicks would you need to make:
 - Term 5?
 - Term 6?
 - Term 10?
- If it would take a long time to build or draw Term 100. Describe a shortcut for finding the number of toothpicks in Term 100.
- Could you use your shortcut to find the number of toothpicks for any term of the sequence? Write a rule for finding the number of toothpicks needed for any term, and explain why it works. (Hint: It is not enough to show that your rule works in a few special cases. Try to explain why it works based on how the terms are built.)